

REMARKS

Formal Matters

Claims 1-11, 22, 27-28, 31-37, 41-44 and 47-54 are pending after entry of the amendments set forth herein.

Claims 1-11, 22, 27-28, 31-37, 41-44 and 47-53 were examined. Claims 1-11, 22, 27-28, 31-37, 41-44 and 47-53 were rejected.

Applicant respectfully requests reconsideration of the application in view of the amendments and remarks made herein.

No new matter has been added.

The Office Action

Claim Objection

In the Official Action of February 23, 2009, the Examiner objected to claim 27 as missing a semicolon at the end of the recitation beginning with "curating said sequence data". In response thereto, Applicants have amended claim 27 above to insert the missing semicolon. Accordingly, the Examiner is respectfully requested to withdraw the objection to claim 27 as being no longer appropriate.

Claims Rejected Under 35 U.S.C. Section 101

Claims 1-11, 22, 27, 31-37, 42-44 and 47-53 were rejected under 35 U.S.C. Section 101 as being directed to non-statutory subject matter.

With regard to claims 1-11, 22, 27, 31-37, 42-44 and 47-51, the Examiner asserted that these claims are drawn to a process and, to be statutory, need to be tied to a particular machine or apparatus, or transform an article to a different state or thing. In response thereto, claims 1 and 27 have been amended to further recite that said curating is performed using stored programming for sequence curation by a computer system configured for curation of sequences. Claim 22 has been amended to further recite that said means for curating comprises stored programming for sequence curation and a computer system configured for curation of sequences, using said stored programming. Support for

these amendments can be found, for example at paragraphs [0049] – [0050], [0053], [0055] – [0056], and [0071] of the specification, and throughout the specification and drawings.

With regard to claims 1-7, 22, 27, 31-36, 42-44 and 47-53, the Examiner asserted that these claims did not provide a practical application of an abstract idea. Claims 1, 27 and 52 have been amended above to further recite outputting said at least one array design for use by a human user. Claim 22 has been amended above to further recite means for outputting said at least one array design for use by a human user. Support for these amendments can be found, for example, at paragraph [0074] of the specification, Fig. 2, and throughout the specification and drawings.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1-11, 22, 27, 31-37, 42-44 and 47-53 under 35 U.S.C. Section 101 as being directed to non-statutory subject matter, as being no longer appropriate.

Claims Rejected Under 35 U.S.C. Section 103(a) (Zhou et al. in view of Markowitz et al. and Cracauer et al.)

Claims 1-11, 22, 27-28, 31-37, 41-44 and 47-53 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Zhou et al., USPAP 2003/0120432 A1 in view of Markowitz et al., USPAP 2003/0100999 and Cracauer et al., USPAP 2007/0178474.

The Examiner admitted that Application Serial No. 60/301,298 does not disclose curating as claimed. The Examiner also implied that Application Serial No. 60/301,298 does not disclose selecting at least one probe specific for said curated sequence data. The Examiner further admitted that Zhou et al. fails to meet the recitations of claims 42-44 and 47-49. Applicant agrees with all of these points. The Examiner asserted that it would have been obvious to modify the method of Zhou et al. by sequence searching for a user-provided nucleotide sequence against a database of GenBank sequences corresponding to Affymetrix (vendor) probes sets as taught by Markowitz et al., to provide a common interface for multiple databases in a relational format to support efficient exploration and analysis.

Applicants respectfully traverse. Applicants do not claim to have invented curating in general. The recited step of curating must be taken together with the rest of the claimed invention. The vendor curates the sequences, by computer, using software configured for this task, see, e.g., paragraphs [0055] and [0064]. Markowitz teaches away from this type of processing, as Markowitz discloses manual data curation, as admitted to by the Examiner. To further clarify this distinction, claims 1, 22 and 27 have been amended above to recite that curation is performed using stored programming for sequence

curation by a computer system configured for curation of sequences.

Applicants further note that Cracauer et al. also fails to teach or suggest curating as claimed.

Applicants respectfully traverse. It is respectfully submitted that Zhou et al. teaches away from the modifications suggested by the Examiner, as Application Serial No. 60/301,298 specifically discloses that the system does not include sequence blasting capabilities when a search is performed, see page 7, under "2.3.2 Constraints". Further, Applicant respectfully submits that Markowitz et al. is directed to a system and method for providing a common interface for multiple databases, see Abstract, and has nothing to do with design or fabrication of arrays. The paragraphs [0043] and [0046] referred to by the Examiner describe methods for classifying gene fragments that may appear in a gene database, e.g., see paragraphs [0040]-[0041]. One method that may be employed in classifying gene fragments is manual curation, where gene fragments without a Unigene match are reviewed to detect potential sequence data contamination. Applicant does not claim to have invented the broad concept of curation. This manual curation described by Markowitz et al. has nothing to do with selection of probes or array design as claimed. Further, the present claims recite selecting at least one gene of interest, not a gene fragment. Nor does Zhou et al. appear to disclose notification of at least one gene of interest received from a customer.

The Examiner argued that since this is an obviousness rejection under 35 U.S.C. Section 103, that Markowitz does not have to disclose curation for the purpose of providing a sequence for probe selection. Applicant respectfully submits that there does have to be a reason to combine the references and, because Zhou et al. selects probe sets that are already pre-existing, there would be no need to perform the curation of Markowitz. Further Zhou et al. teaches away from performing a database search of the type recited in the present claims. Still further, the paragraphs [0093], [0124] and [0125] of Zhou et al. US Publication No. 2003/0120432 that were relied upon by the Examiner, are not disclosed in Zhou et al., Application Serial No. 60/301,298 and therefore are not prior art to the present invention.

The Examiner asserted that "Zhou et al. describe the user selecting probe set identifiers from a corresponding list that correspond to a gene (paragraph 0009)." Applicant respectfully submits that the present claims do not recite selecting probe set identifiers from a corresponding list that corresponds to a gene. Rather, the present claims recite at least one gene of interest, having been selected by a customer, that is received from a customer. Since a gene is selected, and not probe set identifiers, this provides the claimed method with the capability of obtaining sequence data from which to select probes, which is not within the capability of any of the cited references. Specifically, Zhou et al. identifies pre-existing probes using the probe set identifiers or searches for predefined probe sets. Zhou et al. does not provide

for a user to simply select a gene and then provide the capability of searching for sequence data for probe selection, and curating of the sequence data as claimed. A user cannot simply select a gene using the Zhou et al. system to have Zhou et al. design an array for that gene. Zhou et al. requires more information regarding specific sequences, which requires more effort and/or knowledge on the part of the customer. Further, it is respectfully submitted that paragraph [0009] of US 2003/0120432 is not contained in Application Serial No. 60/301,298 and is therefore not prior art to the present claims.

The Examiner further asserted that Zhou et al., at paragraph [0093] describes a user requesting a corresponding probe set for a specified gene sequence, and at paragraphs [0168] – [0169], receiving one or more genes from a user as well as user notations, which the Examiner interpreted to be equivalent to receiving from a customer, at least one array design parameter and notification of at least one gene of interest. Applicant respectfully submits that none of the disclosure described by the Examiner with respect to paragraphs [0093] and [0168]-[0169] is prior art to the present application, as none of that disclosure is included in provisional Application Serial No. 60/301,298. Rather, Application Serial No. 60/301,298 limits user input requests to either: (1) upload a file containing a list of desired probe sets, or (2) perform a search and select the desirable probe sets returned by the query. There is no disclosure of notification of at least one gene of interest, database searching to obtain sequence data for probe selection, curating the sequence data and selecting at least one probe specific for the curated sequence data. If searching is performed by Zhou et al., it is performed to identify desirable probe sets, not sequence data to be curated, see page 8 of Application Serial No. 60/301,298 under “3.3 Login and Order”.

The Examiner asserted that Zhou et al. discloses “accessing/searching a database to obtain sequence data for probe selection for at least one gene of interest such that correspondence may be provided to the user (0095, 0096, 0124, 0110, 0112, 0116, 0119, 0122). Applicant respectfully submits that this is incorrect. Paragraph [0095] discloses that an accession number is provided by the user. The search that is conducted is for probes sets that correspond to the accession number provided, which is not a search for sequence data from which probes may be selected. That is, the search results from a search by Zhou et al. results in probe sets, not in sequence data that is further processed to select probes. Likewise, paragraph [0096] is also directed to probe set identifiers. Paragraph [0124] discloses formulating a query to correlate probe-set identifiers with corresponding genes, EST's or proteins. Again, the probes are already known and therefore a search is not being carried out to obtain sequence data from which probes will be selected. Paragraph [0110] generally describes the portal 400 and does not specifically disclose any particulars about searching. Paragraph [0112] describes that database 516

includes data that associates probe sets with their corresponding gene or EST and their identifiers. This has nothing to do with receiving a gene as an input and searching to obtain sequence data from which one or more probes will be selected. Once again, the probe sets are already known in the database 516. Paragraph [0116] described a service manager 522 which can perform searches to update database 518. There is no disclosure of database searching to obtain sequence data for probe selection. Paragraph [0019] discloses that various types of data may be accessed from remote databases, but does not disclose database searching to obtain sequence data for probe selection. Further, this disclosure is not prior art to the present invention because it is not disclosed in Application Serial No. 60/301,298. Paragraph [0122] describes the user selecting probe-set identifiers. If the probe sets can already be identified, there is no need to perform a database search of the type recited in the present claims.

The Examiner asserted that Cracauer et al. disclose a high-throughput oligonucleotide production system, designing and producing detection arrays for target sequences (paragraph [0434]), and receiving orders from a customer who enters a target sequence into a web interface ([0435, 0539]). It is respectfully submitted that paragraph [0435] is directed to mass producing designed assays based upon a customer's input of a target sequence. Paragraph [0539] describes an INVADERCREATOR module that may be customized for a particular assay. In this instance, however, the user again must input a target sequence or code or number that causes retrieval of a sequence from a database, see paragraph [0540]. As noted above, it is respectfully submitted that Cracauer et al. is not prior art to the instant claims. Further, it would not have been obvious to modify Zhou et al. with Cracauer et al. in the manner suggested by the Examiner, because Zhou et al. selects pre-existing probe sets identified by probe identifiers and there would be no need to curate sequences used for selecting probes, because Zhou et al. does not select probes for sequences. Still further, Zhou et al. teaches away from sequence blasting capabilities when a search is performed, as noted above.

The Examiner indicated that she has access to a computer image of the provisional applications that are relied on as basis for the above rejections. If this is the case, Applicants do not understand why pdf copies of those computer images cannot be sent with the Office Action, particularly since the Office Actions for this case are being emailed to Applicants already.

Further, since the Examiner does have access to the provisional applications, if the Examiner continues to apply the above references, the Examiner is requested to specifically point out where, in each of the priority documents relied upon for Zhou et al. and Cracauer et al., the support for the arguments exists.

Accordingly, in view of the above amendments and remarks, the Examiner is respectfully

requested to reconsider and withdraw the rejection of claims 1-11, 22, 27-28, 31-37, 41-44 and 46-53 under 35 U.S.C. Section 103(a) as being unpatentable over Zhou et al., USPAP 2003/0120432 A1 in view of Markowitz et al., USPAP 2003/0100999 and Cracauer et al., USPAP 2007/0178474, as being clearly improper and failing to set forth a prima facie case of obviousness.

New Claim 54

New claim 54 has been submitted above. Claim 54 depends from claim 1. Support for claim 54 can be found, for example, at paragraph [0050] of the specification. Applicant respectfully requests that the Examiner indicate the allowance of claim 54 in the next Official Action.

Conclusion

Applicant submits that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone the undersigned at 408-736-3554.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-1078, order number 10011076-01.

Respectfully submitted,

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By: /Alan W. Cannon/
Alan W. Cannon
Registration No. 34,977

Agilent Technologies, Inc.
Legal Department, DL429
Intellectual Property Administration
P.O. Box 7599
Loveland, CO 80537-0599